

3. *Vertical Velocity*.—This was computed only over the sea level center. From equations (2.2) and (2.3), one obtains:

$$(3.1) \quad \frac{\frac{\partial Q}{\partial t} + \mathbf{V} \cdot \nabla Q - \mathbf{C} \cdot \nabla Q}{Q^2} = \frac{\partial}{\partial p} \left(\frac{\omega}{Q} \right)$$

or

$$(3.2) \quad \int_{p_1}^{p_0} \frac{\frac{\partial Q}{\partial t} + \mathbf{V} \cdot \nabla Q - \mathbf{C} \cdot \nabla Q}{Q^2} \delta p = \left(\frac{\omega}{Q} \right)_0 - \left(\frac{\omega}{Q} \right)_1$$

Using the boundary condition that ω_0 vanishes at sea level ($p_0=1000$ mb.) the vertical velocity was obtained for any higher level by columnar interpolation.

For a discussion of accuracy of such computations and the difficulties encountered, reference is made to Petterssen and Bradbury [3].

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